

DETAILED ACTION

This Office Action corresponds to application 10/815,074.

Response to Amendment

Claims 1, 2, 18, 23, 25, and 26 have been amended. No claims have been added or cancelled. Accordingly, claims 1-28 are pending.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 9/28/2009 has been considered by the Examiner.

Claim Objections

In light of the correcting amendments, the previous claim objections are withdrawn. Examiner thanks Applicant for the corrections.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4-12, 15-18, and 21-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al. ('Liu' hereafter) (U.S. Patent 7,099,860). Liu teaches the claims in the following drawing references of figures 1-7 and the following cited portions.

With respect to claim 1, Liu teaches A computer-implemented method for ranking information, comprising:

receiving a plurality of query results (col. 3 line 32-34 and figures 6-7; e.g. retrieving a plurality of images in response to a search) of a plurality of search queries (col. 3 line 23-25 and col. 7 line 67-col. 8 line 10 as well as figure 3 drawing reference 302 and col. 12 step 1; e.g. keywords parsed from a query) that were submitted separately (col. 5 line 67-col. 6 line 7 and col. 8 lines 11-14; i.e. the system may also simultaneously search of similar words wherein simultaneous searches can be seen as separately submitted queries);

merging (col. 8 line 22-23; i.e. *adding* found images to the result set) the plurality of query results (col. 3 line 32-34 and figures 6-7) into a merged query result (figs. 6-7), the merged query result (figs. 6-7) being associated with the plurality of search queries (col. 6 line 20-24 and figure 3 which shows keywords associated to images);

determining a first ranking sequence (fig. 4 drawing reference 412) of the merged query result (col. 7 line 15-18figs. 6-7);

presenting the merged query result (figs. 6-7) to a user (figure 2 drawing reference 200) according to the first ranking sequence (col. 7 line 19-21 and drawing reference 416; i.e. displaying a result set from initial query handling);

identifying an input signal (figure 5 drawing reference 502) from the user (200) indicating an interest (col. 7 line 22-23) in a first piece of information (col. 7 line 22-23; i.e. an image a user finds relevant/not relevant) in the merged query result (figures 6-7);

identifying a search query from the plurality of search queries (col. 3 lines 41-48, col. 10 step 4) associated with the merged query result (figs. 6-7), the identified search query (col. 3 lines 41-48, col. 10 step 4) being associated with a query result (figure 3 drawing reference 304 and col. 8 line 57; e.g. an association link) including the first piece of information (col. 6 line 8-19), the query result from among the plurality of query results (col. 10 step 4; "for each positive example, check if any query is linked to it...");

adjusting (col. 3 line 49-50) a query factor associated with the identified search query (col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) responsive to the input signal (col. 8 line 52-64);

locating a second piece of information in the query result (col. 9 line 13-19; "the feature and semantic matcher 152 also try to locate images that have similar low-level features as the example image selected by the user"; herein, the semantic and low-level features as well as the similar images found can be interpreted as an example of the "second piece of information in the query result") associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

determining a score for the second piece of information (col. 9 line 16-19) based at least in part on the query factor col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

determining a second ranking sequence (col. 12 step 7) of the merged query result based at least in part on the score (col. 7 line 49-50 and figure 5); and

presenting the merged query result to the user according to the second ranking sequence (col. 12 step 8 and drawing references 508, 518 as well as figures 6-7).

With respect to claim 2, Liu teaches the method of claim 1, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query result from among the plurality of query results, the method further comprising:

identifying the second search query (col. 10 line 32-33 and figure 3 wherein multiple query keywords are checked) from the plurality of search queries responsive to identifying the input signal (col. 10 line 27-28);

determining a first index score (fig. 3 w_{12} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the search result associated with the identified search query (fig. 3; e.g. 301(1)), the first index score measuring how well keywords in the identified search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

determining a second index score (fig. 3 w_{21} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

adjusting a second query factor associated with the second search query responsive to the input signal and based on the second index score (col. 11 line 40-44 and col. 12 line 16-21),

wherein adjusting the query factor associated with the identified search query comprises adjusting the query factor based on the first index score (col. 10 line 25-36);

locating a third piece of information (fig. 3; e.g. 304(M)) in the second query result associated with the second search query (fig. 3; e.g. 302(M));

determining a second score (fig. 3; e.g. w_{n1} for the third piece of information based at least in part on the second query factor associated with the second search query (fig. 3; e.g. 302(M));

wherein determining the second ranking sequence (fig. 5 drawing reference 510; e.g. a refinement of the results) of the merged query result further comprising determining the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information (col. 12 line 25-27).

With respect to claim 4, Liu teaches the method of claim 1, wherein the input signal comprises user activity associated with the first piece of information (col. 8 line 45-51).

With respect to claim 5, Liu teaches the method of claim 4, wherein the user activity comprises one or more of viewing duration, scrolling, mouse movement, selection of links from the first piece of information, saving, printing, and bookmarking (col. 8 line 47-48 describes at least “mouse movement” as well as “bookmarking”).

With respect to claim 6, Liu teaches the method of claim 4, wherein the input signal further comprises user activity associated with articles linked from the first piece of information (col. 9 lines 61-67).

With respect to claim 7, Liu teaches the method of claim 1, further comprising: identifying parts of text typed by the user (col. 5 line 67-col. 6 line 3; “a natural language parser 202 to parse text-based queries, such as keywords phrases and sentences”), the parts including at least two of the following: nouns, verbs, and proper nouns (col.8 lines 1-10 wherein Liu describes extracting keywords “tigers”, “pictures”, and “images” to teach identifying at least two nouns as well as separating these keywords from “looking for” and “find” which can be seen as identified verbs); and generating the plurality of search queries based on the identified parts (col. 8 line 5-10 and drawing reference 408).

With respect to claim 8, Liu teaches the method of claim 1, wherein the input signal comprises a user rating (col. 9 lines 64-67).

With respect to claim 9, Liu teaches the method of claim 1, wherein one of the plurality of search queries comprises one of query type, query term, application, type of application, article type, and event type (col. 5 line 16 and col. 6 line 1).

With respect to claim 10, Liu teaches the method of claim 9, wherein the query type comprises one of current sentence, current paragraph, text near the cursor, extracted terms, and identified entries (col. 6 line 2; e.g. extracted keywords).

With respect to claim 11, Liu teaches the method of claim 1, wherein the score comprises a relevance score (col. 5 line 30-31).

With respect to claim 12, Liu teaches the method of claim 1, wherein the score comprises a popularity score (col. 10 line 21; e.g. a voting scheme describes “popularity”).

With respect to claim 15, Liu teaches the method of claim 1, wherein the input signal comprises multiple input signals (col. 9 line 52-67; e.g. “view”, rating and “similar” are all inputs effected to suggest a user’s interest).

With respect to claim 16, Liu teaches the method of claim 1, further comprising: generating the plurality of search queries based on a plurality of data streams (col. 8 line 1-4); and executing the plurality of search queries for the plurality of search results (figure 4, drawing reference 406).

With respect to claim 17, Liu teaches the method of claim 16, wherein the plurality of data streams comprise a data stream describing current contextual state of a user (figure 5

drawing reference 504-518; e.g. finding images based on a selected image describes implicitly finding related images to a user's context (e.g. preference).

With respect to claim 18, Liu teaches A computer program product having a computer-readable storage medium having executable computer program instructions tangibly embodied thereon for ranking information, the executable computer program instructions comprising instructions for:

receiving a plurality of query results (col. 3 line 32-34 and figures 6-7; e.g. retrieving a plurality of images in response to a search) of a plurality of search queries (col. 3 line 23-25 and col. 7 line 67-col. 8 line 10 as well as figure 3 drawing reference 302 and col. 12 step 1; e.g. keywords parsed from a query) that were submitted separately (col. 5 line 67-col. 6 line 7 and col. 8 lines 11-14; i.e. the system may also simultaneously search of similar words wherein simultaneous searches can be seen as separately submitted queries);

merging (col. 8 line 22-23; i.e. *adding* found images to the result set) the plurality of query results (col. 3 line 32-34 and figures 6-7) into a merged query result (figs. 6-7), the merged query result (figs. 6-7) being associated with the plurality of search queries (col. 6 line 20-24 and figure 3 which shows keywords associated to images);

determining a first ranking sequence (fig. 4 drawing reference 412) of the merged query result (col. 7 line 15-18figs. 6-7);

presenting the merged query result (figs. 6-7) to a user (figure 2 drawing reference 200) according to the first ranking sequence (col. 7 line 19-21 and drawing reference 416; i.e. displaying a result set from initial query handling);

identifying an input signal (figure 5 drawing reference 502) from the user (200) indicating an interest (col. 7 line 22-23) in a first piece of information (col. 7 line 22-23; i.e. an image a user finds relevant/not relevant) in the merged query result (figures 6-7);

identifying a search query from the plurality of search queries (col. 3 lines 41-48, col. 10 step 4) associated with the merged query result (figs. 6-7), the identified search query (col. 3 lines 41-48, col. 10 step 4) being associated with a query result (figure 3 drawing reference 304 and col. 8 line 57; e.g. an association link) including the first piece of information (col. 6 line 8-19), the query result from among the plurality of query results (col. 10 step 4; “for each positive example, check if any query is linked to it...”);

adjusting (col. 3 line 49-50) a query factor associated with the identified search query (col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) responsive to the input signal (col. 8 line 52-64);

(col. 9 line 13-19; “the feature and semantic matcher 152 also try to locate images that have similar low-level features as the example image selected by the user”; herein, the semantic and low-level features as well as the similar images found can be interpreted as an example of the “second piece of information in the query result”);

determining a score for the second piece of information (col. 9 line 16-19) based at least in part on the query factor col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

determining a second ranking sequence (col. 12 step 7) of the merged query result based at least in part on the score (col. 7 line 49-50 and figure 5); and

presenting the merged query result to the user according to the second ranking sequence (col. 12 step 8 and drawing references 508m, 518 as well as figures 6-7).

With respect to claim 21, Liu teaches the computer program product of claim 18, the executable computer program instructions further comprising instructions for:

generating the plurality of search queries based on a plurality of data streams (col. 8 line 1-4);

and executing the plurality of search queries for the plurality of search results (figure 4, drawing reference 406).

With respect to claim 22, Liu teaches the method of claim 1, wherein determining the second ranking sequence comprises:

determining the second ranking sequence of at least some of the merged query result based at least in part on the score (figure 5 and col. 12 steps 7-8), the at least some of the merged query result associated with at least two search queries (figure 3 and col. 12 step 1).

With respect to claim 23, Liu teaches the computer program product of claim 18, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query_ result from among the plurality of query results, wherein the executable computer program instructions further comprises instructions for:

identifying the second search query (col. 10 line 32-33 and figure 3 wherein multiple query keywords are checked) from the plurality of search queries responsive to identifying the input signal (col. 10 line 27-28);

determining a first index score (fig. 3 w_{12} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the search result associated with the identified search query (fig. 3; e.g. 301(1)), the first index score measuring how well keywords in the identified search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

determining a second index score (fig. 3 w_{21} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

adjusting a second query factor associated with the second search query responsive to the input signal and based on the second index score (col. 11 line 40-44 and col. 12 line 16-21), wherein adjusting the query factor associated with the identified search query comprises adjusting the query factor based on the first index score (col. 10 line 25-36);

locating a third piece of information (fig. 3; e.g. 304(M)) in the second query result associated with the second search query (fig. 3; e.g. 302(M));

determining a second score (fig. 3; e.g. w_{n1} for the third piece of information based at least in part on the second query factor associated with the second search query (fig. 3; e.g. 302(M));

wherein determining the second ranking sequence (fig. 5 drawing reference 510; e.g. a refinement of the results) of the merged query result further comprising determining the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information (col. 12 line 25-27).

With respect to claim 4, Liu teaches the method of claim 1, wherein the input signal comprises user activity associated with the first piece of information (col. 8 line 45-51).

With respect to claim 24, Liu teaches the computer program product of claim 18, the executable computer program instructions further comprising instructions for:

generating the plurality of search queries associated with the merged query result (col. 6 line 38-47);

and adding information from results of the plurality of search queries into the merged query result (col. 8 line 23-25 and figure 4).

With respect to claim 25, Liu teaches A query system for ranking information, comprising:

a computer processor (130) for executing computer program instructions (col. 7 line 52);

a computer-readable storage medium having executable computer program instructions (132, 134) tangibly embodied thereon, the executable computer program instructions comprising instructions for:

a module (150) configured to receive a plurality of query results (col. 3 line 32-34 and figures 6-7; e.g. retrieving a plurality of images in response to a search) of a plurality of search queries (col. 3 line 23-25 and col. 7 line 67-col. 8 line 10 as well as figure 3 drawing reference 302 and col. 12 step 1; e.g. keywords parsed from a query) that were submitted separately (col. 5 line 67-col. 6 line 7 and col. 8 lines 11-14; i.e. the system may also simultaneously search of similar words wherein simultaneous searches can be seen as separately submitted queries);

a module (210-214) configured to merge (col. 8 line 22-23; i.e. *adding* found images to the result set) the plurality of query results (col. 3 line 32-34 and figures 6-7) into a merged query result (figs. 6-7), the merged query result (figs. 6-7) being associated with the plurality of search queries (col. 6 line 20-24 and figure 3 which shows keywords associated to images);

a module configured (216) to determine a first ranking sequence (fig. 4 drawing reference 412) of the merged query result (col. 7 line 15-18figs. 6-7);

a module (200) configured to present the merged query result to a user according to the first ranking sequence (412 and 416);

a module (220) configured to identify an input signal (figure 5 drawing reference 502) from the user (200) indicating an interest (col. 7 line 22-23) in a first piece of information (col. 7 line 22-23; i.e. an image a user finds relevant/not relevant) in the merged query result (figures 6-7);

a module (222) configured to identify a search query from the plurality of search queries (col. 3 lines 41-48, col. 10 step 4) associated with the merged query result (figs. 6-7), the identified search query (col. 3 lines 41-48, col. 10 step 4) being associated with a query result (figure 3 drawing reference 304 and col. 8 line 57; e.g. an association link) including the first

piece of information (col. 6 line 8-19), the query result from among the plurality of query results (col. 10 step 4; "for each positive example, check if any query is linked to it...");

a module (222) configured to adjust (col. 3 line 49-50) a query factor associated with the identified search query (col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) responsive to the input signal (col. 8 line 52-64);

a module (210-214) configured to locate a second piece of information in the query result (col. 9 line 13-19; "the feature and semantic matcher 152 also try to locate images that have similar low-level features as the example image selected by the user"; herein, the semantic and low-level features as well as the similar images found can be interpreted as an example of the "second piece of information in the query result") associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

a module (220-222) configured to determine a score for the second piece of information (col. 9 line 16-19) based at least in part on the query factor col. 5 line 24-29; e.g. a weight indicating a relevance of a keyword to an image) associated with the identified search query (col. 3 lines 41-48, col. 10 step 4);

a module (216) configured to determine a second ranking sequence (col. 12 step 7) of the merged query result based at least in part on the score (col. 7 line 49-50 and figure 5); and

a module (200) configured to present the merged query result to the user according to the second ranking sequence (col. 12 step 8 and drawing references 508m, 518 as well as figures 6-7)..

With respect to claim 26, Liu teaches The query system of claim 25, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query result from among the plurality of query results, the executable computer program instructions further comprises instructions for:

identifying the second search query (col. 10 line 32-33 and figure 3 wherein multiple query keywords are checked) from the plurality of search queries responsive to identifying the input signal (col. 10 line 27-28);

determining a first index score (fig. 3 w_{12} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the search result associated with the identified search query (fig. 3; e.g. 301(1)), the first index score measuring how well keywords in the identified search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

determining a second index score (fig. 3 w_{21} and col. 12 line 24-25; e.g. a ranking score) of the first piece of information (fig. 3; e.g. 304(2)) in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information (col. 6 line 34-35; e.g. weights are assigned according to relevance);

adjusting a second query factor associated with the second search query responsive to the input signal and based on the second index score (col. 11 line 40-44 and col. 12 line 16-21), wherein adjusting the query factor associated with the identified search query comprises adjusting the query factor based on the first index score (col. 10 line 25-36);

locating a third piece of information (fig. 3; e.g. 304(M)) in the second query result associated with the second search query (fig. 3; e.g. 302(M));

determining a second score (fig. 3; e.g. w_{nl} for the third piece of information based at least in part on the second query factor associated with the second search query (fig. 3; e.g. 302(M));

wherein determining the second ranking sequence (fig. 5 drawing reference 510; e.g. a refinement of the results) of the merged query result further comprising determining the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information (col. 12 line 25-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu as applied to claim 1 above in view of Barrett et al. ("Barrett" hereafter) U.S. Patent Application 2003/0135490.

With respect to claim 3, Although Liu teaches a lack of selection from a user of a first piece of information (i.e. the "No" branches in figure 5), they appear to lack teaching (with emphasis) the method of claim 1, wherein the input signal comprises lack of selection of the first

piece of information *for at least a specified amount of time from when the first piece of information is displayed to the user.*

Barrett, however, teaches wherein the input signal comprises lack of selection of the first piece of information *for at least a specified amount of time from when the first piece of information is displayed to the user* (paragraph 0012 step 16) for indicating a time a user spends with a result (i.e. duration) to calculate a user's interest for scoring purposes.

Accordingly, in the same field of endeavor (i.e. information search and ranking), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the interest gauged by Barrett would have given Liu further feedback information for calculating relevance for the benefit of presenting optimized and refined results.

Claims 13, 14, 19, 20, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu as applied to claims 1, 18, and 25, respectively, above.

With respect to claim 13 and similar claims 19 and 27, although Liu teaches refining search results due to a user input (figure 5 drawing references 502, 504 and 518 as well as col. 12 steps 3 and 7-8) to suggest refreshing a display, they do not expressly recite the method of claim 1, further comprising increasing a refresh rate of a display of the merged query result to the user responsive to receiving input signals at an increasing frequency.

However, it would have been obvious for Liu to teach increasing a refresh rate of a display of the merged query result responsive to receiving input signals at an increasing

frequency because in refining results based on user interest, the rate of display would be increased due to user interest (i.e. in a situation of a user continuing to select “similar” and thus retrieving refined results). Such is apparent in Liu’s browsing behavior of a user (col. 9 line 53-59). Therein, it would have been obvious that a user’s browsing behavior would determine subsequent queries for images so that refined (and thus refreshed) results would be presented in the next screen. Such a teaching of varying the refresh (refinement) rate would have been beneficial for the user to quickly refine results and locate the best result suited for their quer(y/ies).

Claims 19 and 27 are substantially rejected under the same rationale as claim 13 for reciting essentially the same subject matter.

With respect to claim 14 and similar claims 20 and 28, Liu teaches the method of claim 1, wherein the input signal is a first input signal and the interest is a first interest (drawing reference 502), further comprising:

receiving a second input signal indicating a second interest in a third piece of information (col. 12 steps 3 and 8 wherein step 8 repeats step 3 to suggest collecting a second indication of interest).

Liu does not appear to expressly recite varying a refresh rate of a display of the merged query result to the user based at least in part on the duration between receiving the first input signal and the second input signal.

However, it would have been obvious for Liu to teach varying a refresh rate of a display of the merged query result to the user based at least in part on the duration between receiving the

first input signal and the second input signal because, depending on the user's interest and feedback (i.e. a duration of input signals indicating if the user is interested or not), the results would have been refined (and thus refreshed) accordingly. Such is apparent when Liu describes a user's browsing behavior to select similar images and thereafter present refined (refreshed) results. Such a teaching of varying the refresh (refinement) rate would have been beneficial for the user to quickly refine results and locate the best result suited for their quer(y/ies).

Claims 20 and 28 are substantially rejected under the same rationale as claim 13 for reciting essentially the same subject matter.

Response to Arguments

Applicant's arguments in the remarks filed 4/7/2009 have been fully considered but they are not persuasive.

35 U.S.C. 102(e) rejections

On page 13-15 of the remarks, Applicant argues that Liu does not disclose (1) "merging the plurality of query results into a merged query result, the merged query result being associated with the plurality of search queries". Examiner respectfully disagrees given the following:

As clarified in the rejection above to teach the amended limitation, Liu teaches receiving a plurality of query results (col. 3 line 32-34 and figures 6-7; e.g. retrieving a plurality of images in response to a search) of a plurality of search queries (col. 3 line 23-25 and col. 7 line 67-col. 8 line 10 as well as figure 3 drawing reference 302 and col. 12 step 1; e.g. keywords parsed from a query) that were submitted separately (col. 5 line 67-col. 6 line 7 and col. 8 lines 11-14; i.e. the

system may also simultaneously search of similar words wherein simultaneous searches can be seen as separately submitted queries).

More specifically, Liu teaches a user entering an initial query (e.g. drawing reference 402 of figure 4). Furthermore, a user may enter queries such as: “tigers”; “tiger pictures”; “Find pictures of Tigers”; and “I’m looking for images of tigers” (see Liu, col. 8 line 1-5). Thereafter, the system may extract one or more keywords from the query to identify images. In the rejection, Examiner has equated keywords in Liu to the claimed “plurality of queries”. In other words, Examiner submits that a keyword serves as a query in that it is used in a search to identify results. Furthermore, the conclusion of equating keywords to queries may be derived from the interpretation that a query can be known to include only one keyword¹. Furthermore, Applicant’s filed specification (e.g. paragraph 0045) states that a keyword query may be “Tuesday” as well as currently pending claim 8 reciting wherein one of the plurality of search queries comprises one of *query term* (i.e. seen as a keyword).

Applicant further argues on page 14 that Liu merely teaches conducting image searches for a single query and ranking query result of the single query. While Examiner does not contend that a user may submit a single query (e.g. 402, figure 4), Examiner does submit that a plurality of queries are submitted in an image retrieval process. That is, a user may enter in a query such as that listed in col. 8 lines 1-4; however, the system of Liu will extract keywords from said queries to identify images to retrieve. In one example, "tiger" can be extracted as well

¹ A definition of Query - The execution of a search on a search engine. The *keyword* or keyword phrase a *searcher* enters into a search field, which initiates a search and ...
www.georgiaseo.net/georgia-search-engine-optimization-glossary-of-seo-terms.html

as "pictures" and "images". Examiner submits that the parsed results, each used for identifying images, may be seen as a plurality of search queries.

Nonetheless, in a further example, Liu's system is able to extract a keyword from the query (i.e. "tiger") and may also *simultaneously search* of similar words (e.g. cat, animal, etc) – see col. 8 lines 11-14. As such, a simultaneous search or, separately submitted search, may be seen as a plurality queries that were submitted separately. Therefore, in this example, a query such as "tiger" is submitted to be searched and simultaneously a search query of cat, animal, etc is also submitted to be searched.

Therefore, while a user may be seen to submit a single query, the system of Liu submits a plurality of queries (keywords) to retrieve images. Accordingly, Liu is seen to teach a plurality of search queries that were submitted separately.

In further response of Applicant's argument (i.e. remarks, page 14), Liu is seen to teach merging results of multiple queries into a merged result. As submitted above, Liu teaches submitting (separately) a plurality of search queries. Thereafter, the images that match the keyword(s) are retrieved (Liu, col. 8 lines 14-16). Moreover, the images identified are added to a result set (i.e. merged query result). In other words, Liu's system is seen to submit a plurality of queries (keywords) wherein those queries are each used in a search to retrieve results. Accordingly, any retrieved results are *added to* a result set, thus providing the claimed "merged query result" that may be seen in figure 7.

Therefore, because Liu receives a plurality of query results (e.g. results of the submitted keywords), of a plurality of search queries (i.e. submitted keywords extracted from a query used

for a search) that were submitted separately (e.g. in a simultaneous search) and further merging these results (or “adding to”) in a result set, Applicant's argument is unpersuasive.

Applicant further argues (p. 15 of the remarks) that Liu does not teach **(2)** presenting a merged query result of multiple search queries. Examiner disagrees for the rationale given above and further submits that the result set (i.e. merged query result) is presented to a user – see figure 4, drawing reference 416 as well as figure 7. Therein, the results of the plurality of queries are added to the result set to teach a merged query result and thereafter, subsequent to a ranking process (i.e. 412), the result set is displayed.

Applicant argues (p. 16 of the remarks) in respect to limitation **(3)** that Liu fails to disclose identifying a query out of multiple search queries that were submitted separately. Examiner disagrees given the rationale above and submits that Liu teaches separately submitting a plurality of queries.

Further, Examiner submits that Liu discloses identifying a query out of multiple search queries that were submitted separately at least because Liu is able to identify a link between a search query and an image selected by a user (e.g. see Liu, col. 8 lines 55-57). In other words, because Liu teaches keywords in the original query are associated with the user-selected images (i.e. a piece of information that a user indicated interest in) and a large weight is assigned to this link. See further in figure 3 wherein a keyword from multiple keywords is respectively identified in correspondence with their respective images. Additionally, Liu teaches a user is given the ability to provide relevance marks (Liu, col. 9 line 60-61). Furthermore, Liu is able

check for each positive example (e.g. a relevant image) if *any* query keyword is linked to it and if so a link is created². Thus, because Liu's system is able to link *any* query keyword *from* the input query based on a user's feedback to an image, Liu is seen to identify a query out of multiple search queries. Furthermore, because the piece of information that the user selected is part of a corresponding query result, Liu teaches that the identified query (e.g. query indicated in linking relationship) is associated with a query result including a first piece of information that the user is interested in.

Applicant additionally argues (p. 17 of the remarks) that Liu does not disclose additional limitations found in claim 7. Examiner respectfully disagrees given the rationale above and submits that Liu teaches generating a plurality of search queries. That is, Liu may parse an input query from a user; however, from the parsed results (e.g. keywords, phrases and sentences) derived from that query, the system submits searches (i.e. a plurality of queries).

Regarding the last paragraph of page 17, Examiner submits that amended claims 2, 23, and 26 are addressed accordingly.

35 U.S.C. 103(a) rejections

Examiner respectfully submits as the arguments pertaining to limitations (1)-(3) are found unpersuasive, similarly, the arguments found on page 18 of the remarks are found

² See further the example given in Liu, col. 10 line 1-12 wherein the system is able to identify "tiger" in relation to positively marked matches. Thus if multiple queries "tiger", "cat", "animal", are submitted (col. 8 line 13-14), then "tiger" is identified.

unpersuasive. Specifically, Liu is relied upon to teach the multiple queries as claimed and thus the claims remain unpatentable by Liu in view of Barrett.

In respect to claims 13, 14, 19, 20, 27, and 28, Applicant disagrees that “increasing a refresh rate of a display of the merged query result responsive to receiving input signals at an increasing frequency” is obvious over Liu. Examiner respectfully disagrees and maintains the rejection in that a merged query result is displayed (i.e. drawing reference 416), a user submits an input signal (504 or 510), and thereafter the new results are displayed (i.e. the merged query result is refreshed by including refined results). Examiner submits that given a user’s browsing behavior, this refresh rate would be increased as a user is dissatisfied with the refined results. In other words, a user receiving a merged query result with irrelevant information would be able to quickly select an image for refinement and thus the display of the merged query result would be refreshed. Thus the dependence of the refresh rate is seen relative to the user’s browsing behavior – similarly to Applicant’s support³ for varying a refresh rate based on the reception of input signals.

Additionally, Applicant alleges the Examiner took Official Notice to these claims. Examiner respectfully disagrees. As seen in the Non-Final Office Action dated 4/7/2009, the above listed claims were of a 35 U.S.C. 103(a) unpatentable rejection over Liu. Furthermore, Examiner made no submission to "Official Notice" or even the assertion that the limitations were “well-known”; rather the claims were rejected under 35 U.S.C. 103(a) with supporting cited

³ Applicant’s disclosure, paragraph 0042 wherein if the query system 132 begins to receive input signals more rapidly indicating increased activity by the user, the query system 132 may increase the refresh rate of the content display.

evidence from Liu (i.e. figure 5, references 502, 504, and 518 as well as col. 12 steps 3 and 7-8 for claims 13, 19, and 27 and reference 502 as well as col. 12 steps 3 and 8 wherein step 8 repeats step 3 to suggest collecting a second indication of interest). Accordingly, the traversal of the rejection is determined inadequate and thus no further evidence is deemed necessary. As seen in the rationale above, the claims are unpatentable over Liu.

Furthermore, because Liu is seen to teach multiple submitted search queries given the rationale above, the arguments to these dependent claims are found unpersuasive.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. For example, each of the cited prior art below explicitly discloses a plurality of search queries and a merged query result.

U.S. Patent Application 2005/0187920 filed by Tenembaum et al. (see paragraph 0037 and figure 2B).

U.S. Patent Application 2002/0069194 filed by Robbins (see paragraphs 0008-0009 and figure 3).

U.S. Patent Application 2003/0208493 filed by Hall et al. (see paragraph 0077).

U.S. Patent 7,039,650 issued to Adams et al. (see figure 3).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Timblin whose telephone number is 571-272-5627. The examiner can normally be reached on M-Th 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT TIMBLIN/

Examiner, Art Unit 2167

/John R. Cottingham/

Supervisory Patent Examiner, Art Unit 2167